Abstract of the Invention

The present invention is directed to MEMS-based accelerometer comprising semiconductor substrate and a generally hollow shell having an open end and a closed end, wherein the open end of the shell is generally bonded to the top surface of the substrate. The shell comprises a plurality of capacitor plates electrically connected to a respective plurality of capacitor electrodes associated with the shell, wherein the shell further comprises a common electrode, and wherein the plurality of capacitor electrodes and the common electrode are electrically connected to the substrate *via* the bonding of the open end of the shell to the substrate. The accelerometer further comprises a sensing element comprising an electrically conductive torsion bar coupled to the shell, defining an axis of rotation. A proof mass and a plurality of electrically conductive paddles are coupled to the torsion bar, wherein a movement of the proof mass is operable to cause a rotation of the paddles about the axis of rotation, therein changing a capacitance between the plurality of paddles and the respective plurality of capacitor plates.